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From: Saidha, Tekchand
Sent: Wednesday, October 23, 2002 11:55 AM
To: STIC-Biotech/ChemLib
Subject: 09471459 - sequence search request

09471459 :

Request for Data base and Interference files :

SEQ ID NO : 6 & 9

Thank you !

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10D01

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9828603.2 (4 wks 12/23/1998) human PDE (SEQ ID NO:2) - 288 amino acid

Priority for SEQ ID NO:5 as of filing of 09221236 (09/1749)

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=> file medline caplus embase scisearch biosis biotechds
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     5.63       6.26

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FILE 'BIOTECHDS' ENTERED AT 16:05:21 ON 23 OCT 2002
COPYRIGHT (C) 2002 THOMSON DERWENT AND INSTITUTE FOR SCIENTIFIC INFORMATION

=> s human PDE XIV
L1            0 HUMAN PDE XIV

=> s human PDE XiV
L2            0 HUMAN PDE XIV

=> s human Phosphodiesterase
L3          223 HUMAN PHOSPHODIESTERASE

=> dup rem l3
PROCESSING COMPLETED FOR L3
L4          134 DUP REM L3 (89 DUPLICATES REMOVED)

=> s human Phosphodiesterase and (14 or xiv)
L5           34 HUMAN PHOSPHODIESTERASE AND (14 OR XIV)

=> focus l5
PROCESSING COMPLETED FOR L5
L6           34 FOCUS L5 1-

=> d l6 ibib ab

L6   ANSWER 1 OF 34  CAPLUS  COPYRIGHT 2002 ACS
ACCESSION NUMBER:         2002:10658  CAPLUS
DOCUMENT NUMBER:          136:80919
TITLE:                    Cloning, sequencing and regulation of human
                          phosphodiesterase-like protein
INVENTOR(S):              Ramakrishnan, Shyam
PATENT ASSIGNEE(S):       Bayer Aktiengesellschaft, Germany
SOURCE:                   PCT Int. Appl., 165 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.        KIND  DATE          APPLICATION NO.  DATE
     ---------------   ----  --------      ---------------  --------
     WO 2002000854      A2   20020103      WO 2001-EP7289   20010626
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WO 2002000854 A3 20020711
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
US 2002103120 A1 20020801 US 2001-891216 20010626
PRIORITY APPLN. INFO.: US 2000-213998P P 20000626
US 2001-293221P P 20010525

AB The invention provides reagents and methods of regulating a **human phosphodiesterase**-like enzyme. The invention also provides protein and cDNA sequences of the **human phosphodiesterase**-like protein. Reagents which regulate **human phosphodiesterase**-like enzyme (PDE-like enzyme) activity and reagents which bind to human PDE-like enzyme gene products can be used to regulate degrdn. of cGMP. Such regulation is particularly useful for treating urinary incontinence, benign prostate hyperplasia, erectile dysfunction, diabetes, cancer, and cardiovascular disorders.

=> focus l5 and dna
AND IS NOT VALID HERE
The term is either unrecognized or invalid.

=> s human Phosphodiesterase and (14 or xiv) and dna
L7 11 HUMAN PHOSPHODIESTERASE AND (14 OR XIV) AND DNA

=> focus l7
PROCESSING COMPLETED FOR L7
L8 11 FOCUS L7 1-

=> d l8 1-11 ibib ab

L8 ANSWER 1 OF 11 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2002:10658 CAPLUS
DOCUMENT NUMBER: 136:80919
TITLE: Cloning, sequencing and regulation of **human phosphodiesterase**-like protein
INVENTOR(S): Ramakrishnan, Shyam
PATENT ASSIGNEE(S): Bayer Aktiengesellschaft, Germany
SOURCE: PCT Int. Appl., 165 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002000854	A2	20020103	WO 2001-EP7289	20010626
WO 2002000854	A3	20020711		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,

BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
US 2002103120 A1 20020801 US 2001-891216 20010626
PRIORITY APPLN. INFO.: US 2000-213998P P 20000626
US 2001-293221P P 20010525

AB The invention provides reagents and methods of regulating a **human phosphodiesterase**-like enzyme. The invention also provides protein and cDNA sequences of the **human phosphodiesterase**-like protein. Reagents which regulate **human phosphodiesterase**-like enzyme (PDE-like enzyme) activity and reagents which bind to human PDE-like enzyme gene products can be used to regulate degrdn. of cGMP. Such regulation is particularly useful for treating urinary incontinence, benign prostate hyperplasia, erectile dysfunction, diabetes, cancer, and cardiovascular disorders.

L8 ANSWER 2 OF 11 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:863446 CAPLUS
DOCUMENT NUMBER: 136:17267
TITLE: Sequences of novel **human phosphodiesterase** IV isozymes and screening the isozymes for compounds which modify their enzymatic activity
INVENTOR(S): Fisher, Douglas A.; Robbins, Michael D.
PATENT ASSIGNEE(S): Pfizer Inc., USA
SOURCE: U.S., 19 pp., Division of U.S. Ser. No. 432,327.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6323041	B1	20011127	US 1995-472600	19950607

PRIORITY APPLN. INFO.: US 1993-75450 B1 19930611
US 1995-432327 B3 19950501

AB This invention relates to novel nucleic acid sequences encoding three novel **human phosphodiesterase** IV (hPDE IV) isoenzymes: hPDE IV-B1, hPDE IV-B2 and hPDE IV-B3. It also relates to polypeptides encoded by such sequences. Amino acid and encoding cDNA sequences of the **human phosphodiesterase** IV isoenzymes are provided. This invention also relates to an assay method for detecting the presence of such novel isoenzymes in human cells, and to a method of identifying compds. or other substances that inhibit or modify the activity of such isoenzymes.

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 3 OF 11 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:736192 CAPLUS
DOCUMENT NUMBER: 133:307126
TITLE: Cloning and cDNA sequences of **human phosphodiesterase** 8a isoforms
INVENTOR(S): Loughney, Kate
PATENT ASSIGNEE(S): ICOS Corporation, USA
SOURCE: U.S., 37 pp., Cont.-in-part of U.S. 5,932,465.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

US 6133007 A 20001017 US 1998-174437 19981016
US 5932465 A 19990803 US 1997-951648 19971016
PRIORITY APPLN. INFO.: US 1997-951648 A2 19971016
AB The present invention provides human family 8 3',5'-cyclic nucleotide phosphodiesterase (PDE8) polypeptides and cDNA(s) encoding the polypeptides. The cDNA(s) were identified by searching EST databases, and an EST (W04835) was identified from a human fetal lung cDNA library. The cDNA nucleotide and deduced amino acid sequences of PDE8A and two splice variants (PDE8A1 and PDE8A2) are provided. Chromosome mapping of gene encoding PDE8a is described. Expression constructs comprising the polynucleotides, host cells transformed with the expression constructs, methods for producing PDE8 polypeptides, antisense polynucleotides, and antibodies specifically immunoreactive with the PDE8 polypeptides are also provided.
REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 4 OF 11 BIOTECHDS COPYRIGHT 2002 THOMSON DERWENT AND ISI
ACCESSION NUMBER: 2002-08640 BIOTECHDS
TITLE: Novel **human phosphodiesterase** polypeptides and polynucleotides for diagnosing, preventing and treating eye, neurological, cardiovascular, cell proliferative and autoimmune/inflammatory disorders; recombinant enzyme gene production via plasmid expression in host cell, agonist, antagonist, antibody, cell culture, sense and antisense useful in disease gene therapy
AUTHOR: THORNTON M; DING L; PATTERSON C; YAO M G; TRIBOULEY C M; LAL P; HAFALIA A J A; BAUGHN M R; RAMKUMAR J; LU Y; WALIA N K
PATENT ASSIGNEE: INCYTE GENOMICS INC
PATENT INFO: WO 2001098471 27 Dec 2001
APPLICATION INFO: WO 2000-US20140 22 Jun 2000
PRIORITY INFO: US 2000-241100 16 Oct 2000
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2002-147799 [19]
AB DERWENT ABSTRACT: NOVELTY - An isolated **human phosphodiesterase** polypeptide (HPDE 1-4) (I), comprising a sequence of 502, 885, 210 or 489 amino acids fully defined in the specification (S1)-(S4), a naturally occurring polypeptide comprising an amino acid sequence at least 90% identical to (S1)-(S4), a biologically active or immunogenic fragment of (S1)-(S4), is new. DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following: (1) an isolated polynucleotide (II) encoding (I) and comprising a sequence of 1802, 3622, 730 or 1713 bp defined in the specification (N1)-(N4), a naturally occurring polynucleotide comprising a polynucleotide sequence at least 90% identical to (N1)-(N4), a polynucleotide complementary to (II) or an RNA equivalent of (II); (2) a recombinant polynucleotide (III) comprising a promoter sequence operably linked to (II); (3) a cell transformed with (III); (4) a transgenic organism comprising (III); (5) producing (I); (6) an isolated antibody (IV) which specifically binds to (I); (7) an isolated polynucleotide comprising at least 60 contiguous nucleotides of (II); (8) detecting (M1) a target polynucleotide having the sequence of (II) in a sample, by: (a) hybridizing the sample with a probe comprising 20 (preferably 60) contiguous nucleotides comprising a sequence complementary to the target polynucleotide in the sample, where the probe specifically hybridizes to the target polynucleotide under conditions where a hybridization complex is formed between the probe and the target polynucleotide or its fragments, or by amplifying the target polynucleotide or its fragment by PCR; and (b) detecting the presence or absence of the hybridization complex or the amplified product, and, optionally, if present the amount of the complex or the amplified product; (9) preparing (P) a polyclonal or monoclonal antibody with the specificity of (IV); (10) an antibody (monoclonal or polyclonal) (V)

produced by (P); (11) a composition comprising (I), an agonist or antagonist compound identified using (I), (IV) or (V); (12) assessing (M2) the toxicity of a test compound; (13) diagnostic test for a condition or a disease associated with the expression of HPDE in a biological sample comprising: (a) combining the sample with (IV) to form an antibody:polypeptide complex; and (b) detecting the complex; (**14**) diagnosing a condition or a disease associated with the expression of HPDE in a subject comprising administering a composition comprising (IV) (preferably where (IV) is labeled); (15) detecting (I) having a sequence of (S1)-(S4) comprising: (a) incubating (IV) with a sample to allow specific binding to (I); and (b) detecting specific binding; and (16) purifying (I) from a sample comprising: (a) incubating (IV) with a sample to allow binding to (I); and (b) separating (IV) from the sample and obtaining the purified polypeptide. WIDER DISCLOSURE - Also disclosed are: (1) variants of (I) and (II); and (2) vector capable of expressing HPDE, its fragment or derivative. BIOTECHNOLOGY - Preparation: (I) is produced by culturing a cell transformed with (III), under conditions suitable for expression of the polypeptide and recovering the expressed polypeptide (claimed). Preferred Antibody: (IV) is a chimeric, single chain, Fab, F(ab')2 fragment or a humanized antibody. Preferred Method: In (M1), the probe comprises at least 60 contiguous nucleotides. Preferred Polypeptides: (I) is preferably selected from (S1)-(S4). Alternatively, (I) comprises either (S1), (S2), (S3) or (S4). (M2) comprises: (a) treating a biological sample containing nucleic acids with the test compound; (b) hybridizing the nucleic acids of the sample with a probe comprising at least 20 contiguous nucleotides of (II) to form a complex; (c) quantifying the amount of hybridization complex; and (d) comparing the complex in the treated biological sample with the amount of complex in an untreated biological sample. Preferred Nucleic Acids: (II) preferably encodes a polypeptide of (S1)-(S4) and is selected from (N1)-(N4). Alternatively, (II) comprises either (N1), (N2), (N3) or (N4). Preferred Antibodies: Preparation of a polyclonal antibody comprises:(a) immunizing an animal with (I), or an immunogenic fragment; (b) isolating antibodies from the animal; and (c) screening the isolated antibodies with (I), to identify a polyclonal antibody which specifically binds to (I). Preparation of monoclonal antibody comprises: (a) immunizing an animal with (I), or an immunogenic fragment; (b) isolating the antibody producing cells from the animal; (c) fusing the antibody producing cells with immortalized cells to form monoclonal antibody-producing hybridoma cells; (d) culturing the hybridoma cells; and (e) isolating monoclonal antibodies which bind specifically to (I). Preferably, (IV) is produced by screening a Fab expression library or by screening a recombinant immunoglobulin library. ACTIVITY - Ophthalmological; Antiinflammatory; Neuroprotective; Nootropic; Anticonvulsant; Antiparkinsonian; Cerebroprotective; Neuroleptic; Tranquilizer; Cytostatic; Antiatherosclerotic; Osteopathic; Antiarteriosclerotic; Hepatotropic; Antipsoriatic; Antiallergic; Antianemic; Antiasthmatic; Antithyroid; Immunosuppressive; Dermatological; Antiulcer; Antirheumatic; Antiarthritic; Antidiabetic; Antibacterial; Virucide; Fungicide; Antiparasitic; Protozoacide; Vulnerary; Anti-HIV; Anthelmintic; Nephrotropic. No supporting data is given. MECHANISM OF ACTION - **Human phosphodiesterase** polypeptide (claimed); Gene therapy; Modulator of (I). No supporting data is given. USE - (I) is useful for screening a compound for effectiveness as an agonist or antagonist of (I). (I), the identified agonist and antagonist are useful for treating a disease or condition associated with decreased or overexpression of functional HPDE in a patient. (I) is useful for screening for a compound that modulates the activity of the polypeptide or that binds to the polypeptide, comprising combining (I) with a test compound and assessing activity of (I) (compared with the presence or absence of the compound) or detecting binding of (I) to the test compound, respectively. (I) is also useful as an immunogen for preparing polyclonal or monoclonal antibodies by hybridoma technology.

(II) is useful for screening a compound for effectiveness in altering expression of a target polynucleotide comprising (N1)-(N4), comprising exposing a sample with the polynucleotide to a compound, detecting expression and comparing the expression in the presence of varying amounts of the compound and in its absence (all claimed). (I) and (II) and modulators of (I) are useful for diagnosis, treatment and prevention of eye, neurological, cardiovascular, cell proliferative and autoimmune/inflammatory disorders. Eye disorders include conjunctivitis, keratitis, glaucoma and macular degeneration, cataract, neurological disorders such as Alzheimer's and Pick disease, Parkinson's disease, amyotrophic lateral sclerosis, epilepsy, stroke, Huntington's disease, multiple sclerosis, dementia, and other extrapyramidal disorder, motor neuron disorder, prion diseases including kuru, metabolic disease of the nervous system, Tourette's disorders and other developmental disorders of the central nervous system, neuromuscular disorders, metabolic, endocrine and toxic myopathies, periodic paralysis, mental disorders including mood, anxiety, schizophrenic disorders, and cell proliferative disorders such as cancer, actinic keratosis, arteriosclerosis, atherosclerosis, bursitis, cirrhosis, hepatitis and psoriasis. Autoimmune/inflammatory disorders include AIDS, adult respiratory distress syndrome, Addison's disease, allergies, anemia, asthma, atherosclerosis, osteoporosis, autoimmune hemolytic anemia, autoimmune thyroiditis, Crohn's disease, atopic dermatitis, diabetes mellitus, Graves' disease, glomerulonephritis, rheumatoid arthritis, scleroderma, systemic lupus erythematosus, systemic sclerosis, ulcerative colitis, hemodialysis, uveitis; viral, bacterial, fungal, parasitic, protozoal, helminthic infections and trauma. (II) is useful for creating knockin humanized animals or transgenic animals to model human disease and to detect and quantify gene expression in biopsied tissues in which expression of HPDE is correlated with disease. (II) is also useful for generating hybridization probes useful in mapping the naturally occurring genomic sequence and oligonucleotide primers derived from (II) are useful to detect single nucleotide polymorphisms. HPDE, its fragments and antibodies specific for HPDE are useful as elements on a microarray which is useful to monitor or measure protein-protein interactions, drug-target interactions and gene expression profiles. ADMINISTRATION - Administration is oral, intravenous, intramuscular, intraarterial, intramedullary, intrathecal, intraventricular, pulmonary, transdermal, subcutaneous, topical, intranasal, sublingual or rectal. Dosage is 0.1 microg-1 g. EXAMPLE - Incyte cDNAs were derived from cDNA libraries constructed using RNA isolated from left atrium (LATRNOT01), ureter tumor tissue (URETTUE01), diseased pons tissue removed from brain (PONSAZT01) and duodenum tissue (SINJNOT03). cDNA were ligated into compatible restriction enzyme sites of the polylinker of a suitable plasmid and transformed into competent Escherichia coli cells. Incyte cDNA was recovered from the plasmids and sequenced. Incyte clones 7476201CB1, 7476312CB1, 2708696CB1 and 6390038CB1 were then used to search publicly available databases such as GenBank primate, mammalian, and eukaryotic databases BLOCKS, DOMO, PRODOM and hidden Markov model (HMM)-based protein family databases such as PFAM. The queries were performed using programs based on BLAST, FASTA, BLIMPS and HMMER. The Incyte cDNA sequences were assembled to produce full-length polynucleotide sequences. The full-length polynucleotide sequences were translated to derive the corresponding polypeptide sequences. Full-length polypeptide sequences were subsequently analyzed by querying against databases. Human phosphodiesterases, HPDE 1-4 comprising 502, 885, 210 or 489 amino acids, respectively encoded by a nucleotide sequence of 1802, 3622, 730 or 1713 bp defined in the specification were isolated. (105 pages)

L8 ANSWER 5 OF 11 BIOTECHDS COPYRIGHT 2002 THOMSON DERWENT AND ISI
ACCESSION NUMBER: 2002-07470 BIOTECHDS
TITLE: Isolated polynucleotide encoding a **human phosphodiesterase**-like enzyme, useful for treating a

disease such as urinary incontinence, benign prostate hyperplasia, erectile dysfunction, diabetes, cancer or cardiovascular disorder;
vector-mediated gene transfer, expression in host cell, antibody, antisense oligonucleotide, ribozyme for recombinant protein production, drug screening and gene therapy

AUTHOR: RAMAKRISHNAN S
PATENT ASSIGNEE: BAYER AG
PATENT INFO: WO 2002000854 3 Jan 2002
APPLICATION INFO: WO 2000-EP7289 26 Jun 2000
PRIORITY INFO: US 2001-293221 25 May 2001
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2002-090522 [12]

AB DERWENT ABSTRACT: NOVELTY - An isolated polynucleotide (N1) encoding a **human phosphodiesterase** (PDE)-like enzyme, is new.
DETAILED DESCRIPTION - An isolated polynucleotide (N1) encoding a **human phosphodiesterase** (PDE)-like enzyme, is new. N1 is selected from: (a) a polynucleotide encoding an PDE-like enzyme polypeptide comprising an amino acid sequence selected from an amino acid sequence (P1) at least 45% identical to the 135 (S1) or 142 (S2) amino acid sequence defined in the specification; (b) a polynucleotide comprising the 401 (S3) or 426 (S4) nucleotide sequence defined in the specification; (c) a polynucleotide which hybridizes under stringent conditions to the polynucleotide of (a) or (b); (d) a polynucleotide sequence which deviates from the sequences of (a)-(c) due to the degeneration of the genetic code; or (e) a polynucleotide which represents a fragment, derivative or allele variation of a polynucleotide sequence specified in (a) to (d). INDEPENDENT CLAIMS are included for the following: (1) an expression vector comprising N1; (2) a host cell comprising the vector of (1); (3) a substantially purified PDE-like enzyme polypeptide encoded by N1; (4) a method of producing an PDE-like enzyme polypeptide, comprising culturing the host cell of (2); (5) a method (M1) of detection of a polynucleotide encoding a PDE-like enzyme polypeptide in a biological sample, comprising hybridizing N1 to the nucleic acid material of a biological sample and detecting a hybridization complex; (6) a method (M2) for detection of N1 or the PDE-like enzyme polypeptide of (3), comprising contacting a biological sample with a reagent which specifically interacts with the polynucleotide or the PDE-like enzyme polypeptide; (7) a diagnostic kit conducting M1 or M2; (8) a method (M3) of screening for agents which decrease the activity of a PDE-like enzyme polypeptide, comprising contacting a test compound with any PDE-like enzyme polypeptide encoded by N1, and detecting binding of the test compound to the PDE-like enzyme polypeptide; (9) a method (M4) of screening for agents which regulate the activity of a PDE-like enzyme polypeptide, comprising contacting a test compound with a PDE-like enzyme polypeptide encoded by N1, and detecting a PDE-like enzyme polypeptide activity, where a test compound which increases or decreases PDE-like enzyme polypeptide activity is identified as a potential therapeutic agent; (10) a method (M5) of screening for agents which decrease the activity of a PDE-like enzyme polypeptide, comprising contacting a test compound with N1 and detecting binding if the compound to the polynucleotide, where a test compound which binds the polynucleotide is identified as a potential therapeutic agent for decreasing the activity of the PDE-like enzyme activity; (11) a method of reducing the activity of a PDE-like enzyme, comprising contacting a cell with a reagent which specifically binds to N1 or any PDE-like enzyme polypeptide of (3), or a product encoded by N1, where the activity of a PDE-like enzyme is reduced; (12) a reagent that modulates the activity of a PDE-like enzyme polypeptide or a polynucleotide, where the reagent is identified by M3-M5;(13) a cDNA encoding a polypeptide comprising the sequence of S1 or S2; (**14**) an expression vector (V1) comprising

a polynucleotide which encodes a polypeptide comprising the sequence of S1 or S2; (15) a host cell comprising V1; (16) a purified polypeptide comprising or consisting (preferred) the amino acid sequence of S1 or S2; (17) a fusion protein comprising a polypeptide having the amino acid sequence of S1 or S2; (18) a method of producing a polypeptide comprising the amino acid sequence of S1 or S2, comprising culturing a host cell comprising an expression vector which encodes the polypeptide; (19) a method (M6) of detecting a coding sequence for a polypeptide comprising the sequence of S1 or S2, comprising hybridizing a polynucleotide comprising 11 contiguous nucleotides of S3 or S4 to nucleic acid material of a biological sample, thereby forming a hybridization complex and detecting the hybridization complex; (20) a kit for detecting a coding sequence for a polypeptide comprising the amino acid sequence of S1 or S2, comprising a polynucleotide comprising 11 contiguous nucleotides of S3 or S4; (21) a method (M7) of detecting a polypeptide comprising the amino acid sequence of S1 or S2, comprising contacting a biological sample with a reagent that specifically binds to the polypeptide to form a reagent-polypeptide complex, and detecting the reagent-polypeptide complex; (22) a kit for detecting a polypeptide comprising the amino acid sequence of S1 or S2 comprising an antibody which specifically binds to the polypeptide; (23) a method (M8) of screening for agents which can modulate the activity of a human PDE-like enzyme; (24) a method of screening for agents which modulate an activity of a human PDE-like enzyme, comprising contacting a test compound with a product (i.e. a polypeptide or RNA) encoded by a polynucleotide which comprises nucleotide sequence of S3 or S4, and detecting binding of the test compound to the product, where a test compound which binds to the product is identified as a potential agent for regulating the activity of the human PDE-like enzyme; and (25) a pharmaceutical composition (C1), comprising a reagent which specifically binds to: (a) a polypeptide comprising the sequence shown in S1 or S2; or (b) a polynucleotide comprising the sequence of S3 or S4. BIOTECHNOLOGY - Preferred Method: In M1, before hybridization, the nucleic acid material of the biological sample is amplified. M8 comprises: (a) contacting a test compound with a polypeptide comprising the sequence selected from amino acid sequences which are at least 45% identical to the amino acid sequence of S1 or S2, or the sequence of S1 or S2; and (b) detecting binding of the test compound to the polypeptide, where a test compound which binds to the polypeptide is identified as a potential agent for regulating activity of the human PDE-like enzyme; or(c) detecting an activity of the polypeptide, where a test compound which increases the activity of the polypeptide is identified as a potential agent for increasing the activity of the human PDE-like enzyme, and where a test compound which decreases the activity of the polypeptide is identified as a potential agent for decreasing the activity of the human PDE-like enzyme. In the method of (11), the product is a polypeptide, an antibody, RNA, an antisense oligonucleotide, or a ribozyme. The cell is in vitro or in vivo. M6 further comprises amplifying the nucleic acid material before the step of hybridizing. In M7, the reagent is an antibody. In M8, the step of contacting is in a cell. The cell is in vitro. The step of contacting is in a cell-free system. The polypeptide or the test compound comprises a detectable label. The test compound displaces a labeled ligand which is bound to the polypeptide. The polypeptide or test compound is bound to a solid support. Preferred cDNA: The cDNA comprises or consists the sequence of S3 or S4. Preferred Vector: In V1, the polynucleotide consists of S3 or S4. Preferred Composition: In C1, the reagent is an antibody, a ribozyme, or an antisense oligonucleotide. ACTIVITY - Cytostatic; vasodilator; antidiabetic; cardiant. A purified test compound was administered to mature adult male monkeys either Cercopithecus aethiops (green monkey) or Macaca fasciculata (cynomologous) weighing between 4 and 8 kg. Animals are anesthetized with diazepam (2.5 mg), ketamine chloride (20 micrograms/kg intramuscularly supplemented as appropriate) and given the test compound dissolved in

saline intracavernosally (0.3 ml). Animals were placed supine, the penis stretched out and a rubber band placed around the root of the base as a tourniquet for three minutes after the injection. The solution was injected through a 27G needle into one of the corpus cavemosa and 5, 10, 25, 30, 60 and 180 minutes later tumescence (increase in volume) and rigidity of the penis was estimated visually and by palpitation. No results given in the specification. MECHANISM OF ACTION - PDE-like enzyme activity modulator. USE - The expression vector or a reagent is useful for modulating the activity of a PDE-like enzyme in a disease such as urinary incontinence, benign prostate hyperplasia, erectile dysfunction, diabetes, cancer or cardiovascular disorder (e.g. ischemic diseases, myocardial infarction). The reagent is an antibody, a ribozyme, or an antisense oligonucleotide (all claimed). ADMINISTRATION - Compositions comprising PDE-like enzyme polypeptide, polynucleotide, modulators or the vector comprising the PDE-like enzyme polynucleotide are administered by oral, intravenous, intramuscular, intra-arterial, intramedullary, intrathecal, intraventricular, transdermal, subcutaneous, intraperitoneal, intranasal, parenteral, topical sublingual or rectal route. The polynucleotide is administered at a dosage of 0.1-10 micrograms, preferably 1 microgram. The antibody is administered at a dosage of 5 micrograms/kg to 5 mg/kg. EXAMPLE - No relevant example given.(166 pages)

L8 ANSWER 6 OF 11 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 2002:175518 BIOSIS
DOCUMENT NUMBER: PREV200200175518
TITLE: **Human phosphodiesterase** 3B interacts with the **14**-3-3 family of signaling molecules.
AUTHOR(S): Palmer, Daniel (1); Raymond, Daniel R.; Dunkerley, Heather A.; Tilley, Douglas G.; Maurice, Donald H.
CORPORATE SOURCE: (1) Pharmacology and Toxicology, Queen's University, Rm A215 Botterell Hall, Kingston, ON, K7L 3N6 Canada
SOURCE: Molecular Biology of the Cell, (Dec., 2000) Vol. 11, No. Supplement, pp. 250a. http://www.molbiolcell.org/. print. Meeting Info.: 40th American Society for Cell Biology Annual Meeting San Francisco, CA, USA December 09-13, 2000 ISSN: 1059-1524.
DOCUMENT TYPE: Conference
LANGUAGE: English

L8 ANSWER 7 OF 11 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 1999:355709 BIOSIS
DOCUMENT NUMBER: PREV199900355709
TITLE: Cloning and characterization of a novel **human phosphodiesterase** that hydrolyzes both cAMP and cGMP (PDE10A.
AUTHOR(S): Fujishige, Kotomi; Kotera, Jun; Michibata, Hideo; Yuasa, Keizo; Takebayashi, Shin-ichiro; Okumura, Katsuzumi; Omori, Kenji (1)
CORPORATE SOURCE: (1) Discovery Research Laboratory, Tanabe Seiyaku Co. Ltd., 2-50, Kawagishi-2-chome, Toda, Saitama, 335-8505 Japan
SOURCE: Journal of Biological Chemistry, (June 25, 1999) Vol. 274, No. 26, pp. 18438-18445. ISSN: 0021-9258.
DOCUMENT TYPE: Article
LANGUAGE: English
SUMMARY LANGUAGE: English
AB cDNA encoding a novel phosphodiesterase (PDE) was isolated from a human fetal lung cDNA library and designated PDE10A. The deduced amino acid sequence contains 779 amino acids, including a putative cGMP binding sequence in the amino-terminal portion of the molecule and a catalytic domain that is 16-47% identical in amino acid sequence to those of other PDE families. Recombinant PDE10A transfected and expressed in COS-7 cells

hydrolyzed cAMP and cGMP with Km values of 0.26 and 7.2 muM, respectively, and Vmax with cGMP was almost twice that with cAMP. Of the PDE inhibitors tested, dipyridamole was most effective, with IC50 values of 1.2 and 0.45 muM for inhibition of cAMP and cGMP hydrolysis, respectively. cGMP inhibited hydrolysis of cAMP, and cAMP inhibited cGMP hydrolysis with IC50 values of **14** and 0.39 muM, respectively. Thus, PDE10A exhibited properties of a cAMP PDE and a cAMP-inhibited cGMP PDE. PDE10A transcripts were particularly abundant in the putamen and caudate nucleus regions of brain and in thyroid and testis, and in much lower amounts in other tissues. The PDE10A gene was located on chromosome 6q26 by fluorescent in situ hybridization analysis. PDE10A represents a new member of the PDE superfamily, exhibiting unique kinetic properties and inhibitor sensitivity.

L8 ANSWER 8 OF 11 MEDLINE
ACCESSION NUMBER: 93035332 MEDLINE
DOCUMENT NUMBER: 93035332 PubMed ID: 1329504
TITLE: The search for mutations in the gene for the beta subunit of the cGMP phosphodiesterase (PDEB) in patients with autosomal recessive retinitis pigmentosa.
AUTHOR: Riess O; Noerremoelle A; Weber B; Musarella M A; Hayden M R
CORPORATE SOURCE: Department of Medical Genetics, University of British Columbia, Vancouver, Canada.
SOURCE: AMERICAN JOURNAL OF HUMAN GENETICS, (1992 Oct) 51 (4) 755-62.
Journal code: 0370475. ISSN: 0002-9297.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199210
ENTRY DATE: Entered STN: 19930122
Last Updated on STN: 19930122
Entered Medline: 19921028
AB The finding of a mutation in the beta subunit of the cyclic GMP (cGMP) phosphodiesterase gene causing retinal degeneration in mice (the Pdeb gene) prompted a search for disease-causing mutations in the **human phosphodiesterase** gene (PDEB gene) in patients with retinitis pigmentosa. All 22 exons including 196 bp of the 5' region of the PDEB gene have been assessed for mutations by using single-strand conformational polymorphism analysis in **14** patients from 13 unrelated families with autosomal recessive retinitis pigmentosa (ARRP). No disease-causing mutations were found in this group of affected individuals of seven different ancestries. However, a frequent intronic and two exonic polymorphisms (Leu489----Gln and Gly842----Gly) were identified. Segregation analysis using these polymorphic sites excludes linkage of ARRP to the PDEB gene in a family with two affected children.

L8 ANSWER 9 OF 11 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.
ACCESSION NUMBER: 92303491 EMBASE
DOCUMENT NUMBER: 1992303491
TITLE: The search for mutations in the gene for the beta subunit of the cGMP phosphodiesterase (PDEB) in patients with autosomal recessive retinitis pigmentosa.
AUTHOR: Riess O.; Noerremoelle A.; Weber B.; Musarella M.A.; Hayden M.R.
CORPORATE SOURCE: Department of Medical Genetics, 2125 East Mall, University of British Columbia,Vancouver, BC V6T 1Z4, Canada
SOURCE: American Journal of Human Genetics, (1992) 51/4 (755-762).
ISSN: 0002-9297 CODEN: AJHGAG
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 012 Ophthalmology

022 Human Genetics
LANGUAGE: English
SUMMARY LANGUAGE: English
AB The finding of a mutation in the beta subunit of the cyclic GMP (cGMP) phosphodiesterase gene causing retinal degeneration in mice (the Pdeb gene) prompted a search for disease-causing mutations in the **human phosphodiesterase** gene (PDEB gene) in patients with retinitis pigmentosa. All 22 exons including 196 bp of the 5' region of the PDEB gene have been assessed for mutations by using single-strand conformational polymorphism analysis in **14** patients from 13 unrelated families with autosomal recessive retinitis pigmentosa (ARRP). No disease-causing mutations were found in this group of affected individuals of seven different ancestries. However, a frequent intronic and two exonic polymorphisms (Leu489.fwdarw.Gln and Gly842.fwdarw.Gly) were identified. Segregation analysis using these polymorphic sites excludes linkage of ARRP to the PDEB gene in a family with two affected children.

L8 ANSWER 10 OF 11 MEDLINE
ACCESSION NUMBER: 2001089202 MEDLINE
DOCUMENT NUMBER: 20574955 PubMed ID: 11125425
TITLE: Expression of different phosphodiesterase genes in human cavernous smooth muscle.
AUTHOR: Kuthe A; Wiedenroth A; Magert H J; Uckert S; Forssmann W G; Stief C G; Jonas U
CORPORATE SOURCE: Department of Urology, Hannover Medical School and Lower Saxony Institute for Peptide Research, Hannover, Germany.
SOURCE: JOURNAL OF UROLOGY, (2001 Jan) 165 (1) 280-3.
Journal code: 0376374. ISSN: 0022-5347.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 200101
ENTRY DATE: Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20010112
AB PURPOSE: Knowledge of intracellular signal propagation in smooth muscle tone regulation is of major importance in the understanding of the physiology of penile erection, and the development of new and selective pharmacological agents for the treatment of related disorders. Since phosphodiesterases (PDE) are key enzymes of the signaling pathway, we elucidate their presence and potential functional relevance in human cavernous tissue. MATERIALS AND METHODS: To identify PDE messenger RNA in human cavernous tissue, we constructed primers for **14** published PDE isoforms. Expression of the genes was then analyzed by reverse transcriptase polymerase chain reaction under standard conditions and by subsequent sequencing. RESULTS: Messenger RNA was detected in human corpus cavernosum for the **human phosphodiesterase** isoenzymes and isoforms PDE1A, PDE1B, PDE1C, PDE2A, PDE3A, PDE4A, PDE4B, PDE4C, PDE4D, PDE5A, PDE7A, PDE8A and PDE9A. CONCLUSIONS: A total of 13 PDE genes were expressed in human cavernous tissue, indicating a role of these enzymes in penile erection regulation. The intracellular mechanisms of hydrolyzing cyclic adenosine monophosphate and cyclic guanosine monophosphate by PDEs are more complex than assumed previously. These findings open up new possibilities in the development of drugs for the treatment of erectile dysfunction.

L8 ANSWER 11 OF 11 SCISEARCH COPYRIGHT 2002 ISI (R)
ACCESSION NUMBER: 92:585875 SCISEARCH
THE GENUINE ARTICLE: JQ667
TITLE: THE SEARCH FOR MUTATIONS IN THE GENE FOR THE BETA-SUBUNIT OF THE CGMP PHOSPHODIESTERASE (PDEB) IN PATIENTS WITH

AUTOSOMAL RECESSIVE RETINITIS-PIGMENTOSA
AUTHOR: RIESS O; NOERREMOELLE A; WEBER B; MUSARELLA M A; HAYDEN M R (Reprint)
CORPORATE SOURCE: UNIV BRITISH COLUMBIA, DEPT MED GENET, ROOM 416, 2125 E MALL, VANCOUVER V6T 1Z4, BC, CANADA; UNIV TORONTO, DEPT GENET, TORONTO M5S 1A1, ONTARIO, CANADA; UNIV TORONTO, DEPT OPHTHALMOL, TORONTO M5S 1A1, ONTARIO, CANADA; UNIV COPENHAGEN, DEPT MED GENET, DK-1168 COPENHAGEN, DENMARK
COUNTRY OF AUTHOR: CANADA; DENMARK
SOURCE: AMERICAN JOURNAL OF HUMAN GENETICS, (OCT 1992) Vol. 51, No. 4, pp. 755-762.
ISSN: 0002-9297.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE; CLIN
LANGUAGE: ENGLISH
REFERENCE COUNT: 43
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The finding of a mutation in the beta subunit of the cyclic GMP (cGMP) phosphodiesterase gene causing retinal degeneration in mice (the Pdeb gene) prompted a search for disease-causing mutations in the **human phosphodiesterase** gene (PDEB gene) in patients with retinitis pigmentosa. All 22 exons including 196 bp of the 5' region of the PDEB gene have been assessed for mutations by using single-strand conformational polymorphism analysis in **14** patients from 13 unrelated families with autosomal recessive retinitis pigmentosa (ARRP). No disease-causing mutations were found in this group of affected individuals of seven different ancestries. However, a frequent intronic and two exonic polymorphisms (Leu489 --> Gln and Gly842 --> Gly) were identified. Segregation analysis using these polymorphic sites excludes linkage of ARRP to the PDEB gene in a family with two affected children.

```
=> s Fidock D Mark/au
L9            0 FIDOCK D MARK/AU

=> s Fidock  Mark/au
L10           8 FIDOCK MARK/AU

=> dup rem l10
PROCESSING COMPLETED FOR L10
L11           4 DUP REM L10 (4 DUPLICATES REMOVED)

=> d l11

L11  ANSWER 1 OF 4     MEDLINE                          DUPLICATE 1
AN   2001699725     MEDLINE
DN   21614508   PubMed ID: 11747989
TI   Isolation and differential tissue distribution of two human cDNAs encoding
     PDE1 splice variants.
AU   Fidock Mark; Miller Michele; Lanfear Jerry
CS   Discovery Biology, Pfizer Global Research and Development, Sandwich, Kent
     CT13 9NJ, UK.. mark_fidock@sandwich.pfizer.com
SO   CELLULAR SIGNALLING, (2002 Jan) 14 (1) 53-60.
     Journal code: 8904683. ISSN: 0898-6568.
CY   England: United Kingdom
DT   Journal; Article; (JOURNAL ARTICLE)
LA   English
FS   Priority Journals
OS   GENBANK-AJ401609; GENBANK-AJ401610
EM   200203
ED   Entered STN: 20011219
     Last Updated on STN: 20020307
     Entered Medline: 20020305
```

=> d l11 2-4 ibib ab

L11 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:475477 CAPLUS
DOCUMENT NUMBER: 133:100473
TITLE: Cyclic AMP phosphodiesterases and cDNAs of human and mouse and their use in drug screening
INVENTOR(S): **Fidock, Mark**
PATENT ASSIGNEE(S): Pfizer Limited, UK; Pfizer Inc.
SOURCE: Eur. Pat. Appl., 104 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1018559	A1	20000712	EP 1999-308902	19991109
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2000197494	A2	20000718	JP 1999-364000	19991222

PRIORITY APPLN. INFO.: GB 1998-28603 A 19981223
GB 1999-22123 A 19990917
EP 1999-308902 A 19991109

AB Amino acid sequences and nucleotide sequences relating to human and mouse phosphodiesterase XIV (PDE-XIV) are described. The enzyme, or cells expressing the PDE-XIV-encoding nucleic acid, may be used to screen for PDE-XIV modulators. The modulators may be used to treat diseases related to PDE-XIV. The PDE-XIV cDNAs were expressed in COS-7 and Sf9 cells. The enzyme was not sensitive to PDE inhibitors milrinone, Rolipram, and Ariflo, but was inhibited by dipyridamole and IBMX with IC50 values of 10.7 and 9.3 .mu.M, resp.
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 2
ACCESSION NUMBER: 2000:818734 CAPLUS
DOCUMENT NUMBER: 134:143814
TITLE: Cloning and characterization of two splice variants of human phosphodiesterase 11A
AUTHOR(S): Hetman, Joanna M.; Robas, Nicola; Baxendale, Rhona; **Fidock, Mark**; Phillips, Stephen C.; Soderling, Scott H.; Beavo, Joseph A.
CORPORATE SOURCE: Department of Pharmacology, University of Washington School of Medicine, Seattle, WA, 98195, USA
SOURCE: Proceedings of the National Academy of Sciences of the United States of America (2000), 97(23), 12891-12895
CODEN: PNASA6; ISSN: 0027-8424
PUBLISHER: National Academy of Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Phosphodiesterase 11A (PDE11A) is a recently identified family of cAMP and cGMP hydrolyzing enzymes. Thus far, a single splice variant designated as PDE11A1 has been reported. In this study, we identify and characterize two addnl. splice variants of PDE11A, PDE11A2 and PDE11A3. The full-length cDNAs are 2,141 bp for PDE11A2 and 2205 bp for PDE11A3. The ORF of PDE11A2 predicts a protein of 576 aa with a mol. mass of 65.8 kDa. The ORF of PDE11A3 predicts a protein of 684 aa with a mol. mass of 78.1 kDa. Comparison of the PDE11A2 sequence with that of PDE11A1 indicates an addnl. 86 aa at the N terminus of PDE11A2. Part of this sequence extends

the potential cGMP binding region (GAF domain) present in PDE11A1. Compared with PDE11A2, PDE11A3 has an addnl. 108 N-terminal amino acids. Sequence anal. of PDE11A3 indicates the presence of another GAF domain in this region. This diversification of regulatory sequences in the N-terminal region of PDE11A splice variants suggests the interesting possibility of differential regulation of these enzymes. Recombinant PDE11A2 and -A3 proteins expressed in the Baculovirus expression system have the ability to hydrolyze both cAMP and cGMP. The Km values for cAMP hydrolysis are 3.3 .mu.M and 5.7 .mu.M for PDE11A2 and PDE11A3, resp. The Km values for cGMP hydrolysis are 3.7 .mu.M and 4.2 .mu.M for PDE11A2 and PDE11A3, resp. Both PDEs showed a Vmax ratio for cAMP/cGMP of approx. 1.0. PDE11A2 is sensitive to dipyridamole, with an IC50 of 1.8 .mu.M, and to zaprinast, with an IC50 of 28 .mu.M. PDE11A3 demonstrated similar pattern of inhibitor sensitivity with IC50 values of 0.82 and 5 .mu.M for dipyridamole and zaprinast, resp.

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 3

ACCESSION NUMBER: 2000:422430 CAPLUS

DOCUMENT NUMBER: 133:173748

TITLE: Cloning and characterization of the human and mouse PDE7B, a novel cAMP-specific cyclic nucleotide phosphodiesterase

AUTHOR(S): Gardner, Clare; Robas, Nicola; Cawkill, Darren; **Fidock, Mark**

CORPORATE SOURCE: Department of Genetic Technologies, Pfizer Central Research, Kent, CT13 N9J, UK

SOURCE: Biochemical and Biophysical Research Communications (2000), 272(1), 186-192
CODEN: BBRCA9; ISSN: 0006-291X

PUBLISHER: Academic Press

DOCUMENT TYPE: Journal

LANGUAGE: English

AB We have identified and characterized a novel member of the PDE7 family of cyclic nucleotide phosphodiesterases (PDE), which we have designated PDE7B. Mouse and human full-length cDNAs were isolated encoding a protein of 446 and 450 amino acids, resp. The predicted protein sequence of PDE7B showed highest homol. (70% identity) to that of PDE7A. Northern blot anal. identified a single 5.5-kb transcript with highest levels detected in brain, heart, and liver. Kinetic anal. of the mouse and human purified recombinant enzymes show them to specifically hydrolyze cAMP with a Km of 0.1 and 0.2 .mu.M resp. Inhibitor studies show sensitivity to dipyridamole, IC50 of 0.51 and 1.94 .mu.M, and IBMX, IC50 of 3.81 and 7.37 .mu.M, for the mouse and human enzymes, resp. This shows that dipyridamole is not selective for cGMP over cAMP PDEs as previously believed. Other std. PDE inhibitors including zaprinast, rolipram, and milrinone do not significantly inhibit PDE7B. (c) 2000 Academic Press.

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> s PDE-IV
L12 1485 PDE-IV

=> d his

(FILE 'HOME' ENTERED AT 16:03:44 ON 23 OCT 2002)

FILE 'MEDLINE, CAPLUS, EMBASE, SCISEARCH, BIOSIS, BIOTECHDS' ENTERED AT 16:05:12 ON 23 OCT 2002

FILE 'MEDLINE, CAPLUS, EMBASE, SCISEARCH, BIOSIS, BIOTECHDS' ENTERED AT

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     16:05:21 ON 23 OCT 2002
L1             0 S HUMAN PDE XIV
L2             0 S HUMAN PDE XIV
L3           223 S HUMAN PHOSPHODIESTERASE
L4           134 DUP REM L3 (89 DUPLICATES REMOVED)
L5            34 S HUMAN PHOSPHODIESTERASE AND (14 OR XIV)
L6            34 FOCUS L5 1-
L7            11 S HUMAN PHOSPHODIESTERASE AND (14 OR XIV) AND DNA
L8            11 FOCUS L7 1-
L9             0 S FIDOCK D MARK/AU
L10            8 S FIDOCK  MARK/AU
L11            4 DUP REM L10 (4 DUPLICATES REMOVED)
L12         1485 S PDE-IV

=> log y
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                      ENTRY    SESSION
FULL ESTIMATED COST                                    88.58      94.84

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)          SINCE FILE      TOTAL
                                                      ENTRY    SESSION
CA SUBSCRIBER PRICE                                    -4.34      -4.34

STN INTERNATIONAL LOGOFF AT 16:16:30 ON 23 OCT 2002
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WEST Search History

DATE: Wednesday, October 23, 2002

Set Name side by side	Query	Hit Count	Set Name result set
DB=USPT; PLUR=YES; OP=ADJ			
L18	MSCLMVERCGE	0	L18
L17	Met Ser Cys Leu Met Val Glu Arg Cys Gly Glu	0	L17
L16	human pde and dna.clm.	15	L16
L15	L14 and dna	31	L15
L14	human pde	76	L14
L13	PDE XIV	0	L13
L12	L10 and Phosphodiesterase	179	L12
L11	human cAMP Phosphodiesterase and 110	0	L11
L10	L9 and Phosphodiesterase	179	L10
L9	PDE and XIV	188	L9
L8	PDE-XIV	0	L8
L7	human and PDE-XIV	0	L7
L6	human Phosphodiesterase and PDE-XIV	0	L6
L5	human Phosphodiesterase.clm.	6	L5
L4	L3.clm.	0	L4
L3	human cAMP Phosphodiesterase	8	L3
L2	5932465	4	L2
L1	6146876	1	L1

END OF SEARCH HISTORY

WEST

End of Result Set

Generate Collection Print

L2: Entry 4 of 4 File: USPT Aug 3, 1999

US-PAT-NO: 5932465
DOCUMENT-IDENTIFIER: US 5932465 A

TITLE: Phosphodiesterase 8A

DATE-ISSUED: August 3, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Loughney; Kate	Seattle	WA		

US-CL-CURRENT: 435/196; 435/252.3, 435/254.11, 435/320.1, 435/325, 536/23.2

CLAIMS:

What is claimed is:

1. A purified and isolated polynucleotide encoding a polypeptide selected from the group consisting of a phosphodiesterase 8 (PDE8) polypeptide, the polypeptide set forth in SEQ ID NO:2, the polypeptide set forth in SEQ ID NO:4, and the polypeptide set forth in SEQ ID NO:6.

2. The polynucleotide according to claim 1 comprising the sequence set forth in SEQ ID NO: 1.

3. The polynucleotide according to claim 1 comprising the in SEQ ID NO: 3.

4. The polynucleotide according to claim 1 comprising the sequence set forth in SEQ ID NO: 5.

5. A polynucleotide encoding a human phosphodiesterase 8 (PDE8) polypeptide selected from the group consisting of:

a) the polynucleotide according to any one of claims 2, 3, and 4; and

b) a DNA which hybridizes under moderately stringent conditions to the polynucleotide of (a), said moderately stringent conditions comprising a final wash at 65.degree. C. in 2.times.SSC and 0.1% SDS.

6. A polynucleotide encoding a human phosphodiesterase 8 (PDE8) polypeptide selected from the group consisting of:

a) the polynucleotide according to claim 1; and

b) a DNA which hybridizes under moderately stringent conditions to the polynucleotide of (a), said moderately stringent conditions comprising a final wash at 65.degree. C. in 2.times.SSC and 0.1% SDS.

7. The polynucleotide of claim 1 which is a DNA molecule.

8. The DNA of claim 7 which is a cDNA molecule.

9. The DNA of claim 7 which is a genomic DNA molecule.

10. The DNA of claim 7 which is a wholly or partially chemically synthesized DNA molecule.

11. An anti-sense polynucleotide which specifically hybridizes with the complement of the polynucleotide of claim 1.

12. A expression construct comprising the polynucleotide according to claim 1.

13. A host cell transformed or transfected with the polynucleotide according to claim 12.

14. A method for producing a phosphodiesterase 8 (PDE8) polypeptide comprising the steps of:

a) growing the host cell according to claim 13 under conditions appropriate for expression of the PDE8 polypeptide and

b) isolating the PDE8 polypeptide from the host cell or the medium of its growth.

WEST

Generate Collection | Print

Search Results - Record(s) 1 through 4 of 4 returned.

☐ 1. Document ID: US 6156528 A

L2: Entry 1 of 4 File: USPT Dec 5, 2000

US-PAT-NO: 6156528
DOCUMENT-IDENTIFIER: US 6156528 A

TITLE: Methods for using a phosphodiesterase in pharmaceutical screening to identify compounds for treatment of neoplasia

DATE-ISSUED: December 5, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Pamukcu; Rifat	Spring House	PA		
Piazza; Gary A.	Doylestown	PA		

US-CL-CURRENT: 435/25; 435/13, 435/184, 435/19

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

☐ 2. Document ID: US 6133007 A

L2: Entry 2 of 4 File: USPT Oct 17, 2000

US-PAT-NO: 6133007
DOCUMENT-IDENTIFIER: US 6133007 A

TITLE: Phosphodiesterase 8A

DATE-ISSUED: October 17, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Loughney; Kate	Seattle	WA		

US-CL-CURRENT: 435/196; 435/183

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

☐ 3. Document ID: US 6130053 A

L2: Entry 3 of 4 File: USPT Oct 10, 2000

US-PAT-NO: 6130053
DOCUMENT-IDENTIFIER: US 6130053 A

TITLE: Method for selecting compounds for inhibition of neoplastic lesions

DATE-ISSUED: October 10, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Thompson; W. Joseph	Doylestown	PA		
Liu; Li	Ambler	PA		
Li; Han	Yardley	PA		

US-CL-CURRENT: 435/15; 435/69.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 4. Document ID: US 5932465 A

L2: Entry 4 of 4 File: USPT Aug 3, 1999

US-PAT-NO: 5932465
DOCUMENT-IDENTIFIER: US 5932465 A

TITLE: Phosphodiesterase 8A

DATE-ISSUED: August 3, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Loughney; Kate	Seattle	WA		

US-CL-CURRENT: 435/196; 435/252.3, 435/254.11, 435/320.1, 435/325, 536/23.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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Generate Collection | Print

Terms	Documents
5932465	4

Display Format: CIT Change Format

Previous Page Next Page

WEST

Generate Collection | Print

Search Results - Record(s) 1 through 6 of 6 returned.

☐ 1. Document ID: US 6368815 B1

L5: Entry 1 of 6 File: USPT Apr 9, 2002

US-PAT-NO: 6368815
DOCUMENT-IDENTIFIER: US 6368815 B1

TITLE: Screening of molecules that inhibit human phosphodiesterase 4A produced by non-recombinant cell lines

DATE-ISSUED: April 9, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Szilagyi; Corinne	Vitry-sur-Seine			FR

US-CL-CURRENT: 435/19; 424/94.6, 435/196

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw. Desc | Image

☐ 2. Document ID: US 6350603 B1

L5: Entry 2 of 6 File: USPT Feb 26, 2002

US-PAT-NO: 6350603
DOCUMENT-IDENTIFIER: US 6350603 B1

TITLE: Phosphodiesterase 10

DATE-ISSUED: February 26, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Loughney; Kate	Seattle	WA		

US-CL-CURRENT: 435/196; 435/252.3, 435/320.1, 435/325, 435/69.1, 530/350, 536/23.1, 536/23.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw. Desc | Image

☐ 3. Document ID: US 6291199 B1

L5: Entry 3 of 6 File: USPT Sep 18, 2001

US-PAT-NO: 6291199
DOCUMENT-IDENTIFIER: US 6291199 B1

TITLE: Human phosphodiesterase type IVC, and its production and use

DATE-ISSUED: September 18, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Owens; Raymond John	Henley-on-Thames			GB
Perry; Martin John	Worcester Park			GB
Lumb; Simon Mark	Maidenhead			GB

US-CL-CURRENT: 435/19; 435/196, 435/69.1, 536/23.1, 536/23.2, 536/23.5, 536/24.3

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw. Desc | Image

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☐ 4. Document ID: US 6277377 B1

L5: Entry 4 of 6 File: USPT Aug 21, 2001

US-PAT-NO: 6277377
DOCUMENT-IDENTIFIER: US 6277377 B1

TITLE: Human phosphodiesterase regulatory subunit

DATE-ISSUED: August 21, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hillman; Jennifer L.	San Jose	CA		
Corley; Neil C.	Mountain View	CA		
Shah; Purvi	Sunnyvale	CA		

US-CL-CURRENT: 424/185.1; 435/7.1, 514/12, 530/350

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw. Desc | Image

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☐ 5. Document ID: US 5932465 A

L5: Entry 5 of 6 File: USPT Aug 3, 1999

US-PAT-NO: 5932465
DOCUMENT-IDENTIFIER: US 5932465 A

TITLE: Phosphodiesterase 8A

DATE-ISSUED: August 3, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Loughney; Kate	Seattle	WA		

US-CL-CURRENT: 435/196; 435/252.3, 435/254.11, 435/320.1, 435/325, 536/23.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 6. Document ID: US 5389527 A

L5: Entry 6 of 6 File: USPT Feb 14, 1995

US-PAT-NO: 5389527
DOCUMENT-IDENTIFIER: US 5389527 A

TITLE: DNA encoding mammalian phosphodiesterases

DATE-ISSUED: February 14, 1995

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Beavo; Joseph A.	Seattle	WA		
Charbonneau; Harry	W. Lafayette	WA		
Sonnenburg; William K.	Mountlake Terrace	WA		

US-CL-CURRENT: 435/69.1; 435/196, 435/199, 435/252.3, 435/254.11, 435/320.1, 536/23.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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Terms	Documents
human Phosphodiesterase.clm.	6

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L5: Entry 6 of 6 File: USPT Feb 14, 1995

US-PAT-NO: 5389527
DOCUMENT-IDENTIFIER: US 5389527 A

TITLE: DNA encoding mammalian phosphodiesterases

DATE-ISSUED: February 14, 1995

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Beavo; Joseph A.	Seattle	WA		
Charbonneau; Harry	W. Lafayette	WA		
Sonnenburg; William K.	Mountlake Terrace	WA		

US-CL-CURRENT: 435/69.1; 435/196, 435/199, 435/252.3, 435/254.11, 435/320.1, 536/23.2

CLAIMS:

What is claimed is:

1. A purified and isolated polynucleotide sequence comprising a polynucleotide sequence encoding a mammalian cyclic GMP stimulated nucleotide phosphodiesterase enzyme having an amino acid sequence selected from the group consisting of: SEQ ID NO: 39 and SEQ ID NO: 45.

2. A polynucleotide sequence according to claim 1 which encodes a human phosphodiesterase enzyme.

3. A polynucleotide sequence according to claim 1 which encodes a bovine phosphodiesterase enzyme.

4. A DNA sequence according to claim 3 selected from the group consisting of the bovine DNA inserts present in vectors p12.3A (A.T.C.C. 68577), pCaM-40 (A.T.C.C. 68576), pBBCGS PDE-5 (A.T.C.C. 68578), and p3CGS-5 (A.T.C.C. 68579).

5. A cDNA sequence according to claim 1.

6. A genomic DNA sequence according to claim 1.

7. A DNA vector having inserted therein a DNA sequence according to claim 1.

8. A procaryotic or eucaryotic host cell stably transformed with a polynucleotide sequence according to claim 1.

9. A yeast host cell according to claim 8.

10. A purified and isolated polynucleotide sequence comprising a polynucleotide sequence encoding a polypeptide having the enzymatic activity of a mammalian cyclic GMP stimulated nucleotide phosphodiesterase and selected from the group consisting of:

(a) the mammalian DNA inserts in vectors p3CGS-5 (A.T.C.C. 68579) and pHcgs6n (A.T.C.C. 68962);

(b) polynucleotide sequences which hybridize under stringent hybridization conditions to an antisense stand of the mammalian DNA inserts in vectors p3CGS-5 (A.T.C.C. 68579), pHcgs6n (A.T.C.C. 68962), pGSPDE6.1 (A.T.C.C. 68583), pGSPDE7.1 (A.T.C.C.68585), pGSPDE9.2 (A.T.C.C. 68584), pBBCGSPDE-5 (A.T.C.C. 68578); and

(c) DNA sequences encoding the same polypeptide as the DNA sequences of (a) and (b) above by means of degenerate codons.

11. A method for producing a polypeptide having the enzymatic activity of a cyclic GMP stimulated cyclic nucleotide phosphodiesterase, said method comprising:

(a) stably transforming or transfecting a procaryotic or eucaryotic host cell with a polynucleotide sequence according to claim 1 or 10; and

(b) growing the host cell formed in step (a) in a nutrient medium under conditions allowing expression of said DNA sequence in said host cell.

12. A method according to claim 11 further including the step of isolating the polypeptide product of expression of said polynucleotide sequence in said host cell.

13. A method according to claim 11 wherein said host cell is a yeast host cell.

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Search Results - Record(s) 1 through 8 of 8 returned.

☐ 1. Document ID: US 6350603 B1

L3: Entry 1 of 8 File: USPT Feb 26, 2002

US-PAT-NO: 6350603
DOCUMENT-IDENTIFIER: US 6350603 B1

TITLE: Phosphodiesterase 10

DATE-ISSUED: February 26, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Loughney; Kate	Seattle	WA		

US-CL-CURRENT: 435/196; 435/252.3, 435/320.1, 435/325, 435/69.1, 530/350, 536/23.1, 536/23.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw. Desc | Image

☐ 2. Document ID: US 6335170 B1

L3: Entry 2 of 8 File: USPT Jan 1, 2002

US-PAT-NO: 6335170
DOCUMENT-IDENTIFIER: US 6335170 B1

TITLE: Gene expression in bladder tumors

DATE-ISSUED: January 1, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Orntoft; Torben F.	DK 8230 Aabyhoj			DK

US-CL-CURRENT: 435/6; 435/91.1, 435/91.2, 536/23.1, 536/24.3, 536/24.31, 536/24.33

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw. Desc | Image

☐ 3. Document ID: US 6146876 A

L3: Entry 3 of 8 File: USPT Nov 14, 2000

US-PAT-NO: 6146876

DOCUMENT-IDENTIFIER: US 6146876 A

TITLE: 22025, a novel human cyclic nucleotide phosphodiesterase

DATE-ISSUED: November 14, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Robision; Keith E.	Wilmington	MA		
Kapeller-Libermann; Rosana	Chestnut Hill	MA		
White; David	Holbrook	MA		

US-CL-CURRENT: 435/243; 435/252.3, 435/320.1, 536/23.2, 536/23.5, 536/24.31

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw. Desc | Image

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☐ 4. Document ID: US 6133007 A

L3: Entry 4 of 8 File: USPT Oct 17, 2000

US-PAT-NO: 6133007
DOCUMENT-IDENTIFIER: US 6133007 A

TITLE: Phosphodiesterase 8A

DATE-ISSUED: October 17, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Loughney; Kate	Seattle	WA		

US-CL-CURRENT: 435/196; 435/183

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw. Desc | Image

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☐ 5. Document ID: US 6100025 A

L3: Entry 5 of 8 File: USPT Aug 8, 2000

US-PAT-NO: 6100025
DOCUMENT-IDENTIFIER: US 6100025 A

TITLE: Cloning by complementation and related processes

DATE-ISSUED: August 8, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wigler; Michael H.	Lloyd Harbor	NY		
Colicelli; John J.	Los Angeles	CA		

US-CL-CURRENT: 435/6; 435/174, 435/252.3, 435/320.1, 435/91.2, 536/23.1, 536/24.3, 536/24.33

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC
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☐ 6. Document ID: US 6069240 A

L3: Entry 6 of 8 File: USPT May 30, 2000

US-PAT-NO: 6069240
DOCUMENT-IDENTIFIER: US 6069240 A

TITLE: Cloning by complementation and related processes

DATE-ISSUED: May 30, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wigler; Michael H.	Lloyd Harbor	NY		
Colicelli; John J.	Los Angeles	CA		

US-CL-CURRENT: 536/23.1; 435/6

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC
Draw. Desc | Image

☐ 7. Document ID: US 5977305 A

L3: Entry 7 of 8 File: USPT Nov 2, 1999

US-PAT-NO: 5977305
DOCUMENT-IDENTIFIER: US 5977305 A

TITLE: Cloning by complementation and related processes

DATE-ISSUED: November 2, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wigler; Michael H.	Lloyd Harbor	NY		
Colicelli; John J.	Los Angeles	CA		

US-CL-CURRENT: 530/350; 530/300

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC
Draw. Desc | Image

☐ 8. Document ID: US 5932465 A

L3: Entry 8 of 8 File: USPT Aug 3, 1999

US-PAT-NO: 5932465
DOCUMENT-IDENTIFIER: US 5932465 A

TITLE: Phosphodiesterase 8A

DATE-ISSUED: August 3, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Loughney; Kate	Seattle	WA		

US-CL-CURRENT: 435/196; 435/252.3, 435/254.11, 435/320.1, 435/325, 536/23.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw. Desc | Image

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Terms	Documents
human cAMP Phosphodiesterase	8

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WEST Search History

DATE: Wednesday, October 23, 2002

Set Name side by side	Query	Hit Count	Set Name result set
DB=USPT; PLUR=YES; OP=ADJ			
L12	L10 and Phosphodiesterase	179	L12
L11	human cAMP Phosphodiesterase and 110	0	L11
L10	L9 and Phosphodiesterase	179	L10
L9	PDE and XIV	188	L9
L8	PDE-XIV	0	L8
L7	human and PDE-XIV	0	L7
L6	human Phosphodiesterase and PDE-XIV	0	L6
L5	human Phosphodiesterase.clm.	6	L5
L4	L3.clm.	0	L4
L3	human cAMP Phosphodiesterase	8	L3
L2	5932465	4	L2
L1	6146876	1	L1

END OF SEARCH HISTORY

WEST

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Search Results - Record(s) 1 through 10 of 15 returned.

☐ 1. Document ID: US 6350603 B1

L16: Entry 1 of 15 File: USPT Feb 26, 2002

US-PAT-NO: 6350603
DOCUMENT-IDENTIFIER: US 6350603 B1

TITLE: Phosphodiesterase 10

DATE-ISSUED: February 26, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Loughney; Kate	Seattle	WA		

US-CL-CURRENT: 435/196; 435/252.3, 435/320.1, 435/325, 435/69.1, 530/350, 536/23.1, 536/23.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC
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☐ 2. Document ID: US 6323041 B1

L16: Entry 2 of 15 File: USPT Nov 27, 2001

US-PAT-NO: 6323041
DOCUMENT-IDENTIFIER: US 6323041 B1

TITLE: Screening novel human phosphodiesterase IV isozymes for compounds which modify their enzymatic activity

DATE-ISSUED: November 27, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fisher; Douglas A.	New York	NY		
Robbins; Michael D.	New York	NY		

US-CL-CURRENT: 436/501; 435/183, 435/19, 435/196, 435/4, 435/455, 435/7.1, 536/23.1, 536/23.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC
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☐ 3. Document ID: US 6100025 A

L16: Entry 3 of 15 File: USPT Aug 8, 2000

US-PAT-NO: 6100025
DOCUMENT-IDENTIFIER: US 6100025 A

TITLE: Cloning by complementation and related processes

DATE-ISSUED: August 8, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wigler; Michael H.	Lloyd Harbor	NY		
Colicelli; John J.	Los Angeles	CA		

US-CL-CURRENT: 435/6; 435/174, 435/252.3, 435/320.1, 435/91.2, 536/23.1, 536/24.3, 536/24.33

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC
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☐ 4. Document ID: US 6069240 A

L16: Entry 4 of 15 File: USPT May 30, 2000

US-PAT-NO: 6069240
DOCUMENT-IDENTIFIER: US 6069240 A

TITLE: Cloning by complementation and related processes

DATE-ISSUED: May 30, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wigler; Michael H.	Lloyd Harbor	NY		
Colicelli; John J.	Los Angeles	CA		

US-CL-CURRENT: 536/23.1; 435/6

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC
Draw Desc | Image

☐ 5. Document ID: US 6015677 A

L16: Entry 5 of 15 File: USPT Jan 18, 2000

US-PAT-NO: 6015677
DOCUMENT-IDENTIFIER: US 6015677 A

TITLE: Assay methods using DNA encoding mammalian phosphodiesterases

DATE-ISSUED: January 18, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Beavo; Joseph A.	Seattle	WA		
Bentley; Kelley J.	Seattle	WA		
Charbonneau; Harry	W. Lafayette	IN		
Sonnenburg; William K.	Mountlake Terrace	WA		

US-CL-CURRENT: 435/6; 435/196, 435/252.3, 435/254.21, 435/29

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC
Draw Desc | Image

☐ 6. Document ID: US 5932477 A

L16: Entry 6 of 15 File: USPT Aug 3, 1999

US-PAT-NO: 5932477
DOCUMENT-IDENTIFIER: US 5932477 A

TITLE: Polynucleotides encoding human brain phosphodiesterase

DATE-ISSUED: August 3, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Livi; George P.	Havertown	PA		
McLaughlin; Megan M.	Drexel Hill	PA		
Torphy; Theodore J.	Bryn Mawr	PA		

US-CL-CURRENT: 435/325; 435/252.3, 435/254.2, 435/320.1, 435/419, 536/23.5

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC
Draw Desc | Image

☐ 7. Document ID: US 5932465 A

L16: Entry 7 of 15 File: USPT Aug 3, 1999

US-PAT-NO: 5932465
DOCUMENT-IDENTIFIER: US 5932465 A

TITLE: Phosphodiesterase 8A

DATE-ISSUED: August 3, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Loughney; Kate	Seattle	WA		

US-CL-CURRENT: 435/196; 435/252.3, 435/254.11, 435/320.1, 435/325, 536/23.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC
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☐ 8. Document ID: US 5922557 A

L16: Entry 8 of 15 File: USPT Jul 13, 1999

US-PAT-NO: 5922557
DOCUMENT-IDENTIFIER: US 5922557 A

TITLE: System for stably expressing a high-affinity camp phosphodiesterase and use thereof

DATE-ISSUED: July 13, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Pon; Douglas J.	Dorval			CA

US-CL-CURRENT: 435/21; 435/19, 435/4, 435/7.6

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw. Desc | Image

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☐ 9. Document ID: US 5686286 A

L16: Entry 9 of 15 File: USPT Nov 11, 1997

US-PAT-NO: 5686286
DOCUMENT-IDENTIFIER: US 5686286 A

TITLE: hPDE IV-C: a novel human phosphodiesterase IV isozyme

DATE-ISSUED: November 11, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fisher; Douglas A.	Mystic	CT		

US-CL-CURRENT: 435/199; 435/196, 435/252.3, 435/320.1, 435/69.1, 536/23.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw. Desc | Image

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☐ 10. Document ID: US 5672509 A

L16: Entry 10 of 15 File: USPT Sep 30, 1997

US-PAT-NO: 5672509
DOCUMENT-IDENTIFIER: US 5672509 A

TITLE: hPDE IV-C: a human phosphodiesterase IV isozyme

DATE-ISSUED: September 30, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fisher; Douglas A.	Mystic	CT		

US-CL-CURRENT: 435/325; 435/320.1, 435/91.1, 536/23.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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Terms	Documents
human pde and dna.clm.	15

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6133607

L1: Entry 1 of 1 File: USPT Nov 14, 2000

US-PAT-NO: 6146876
DOCUMENT-IDENTIFIER: US 6146876 A

TITLE: 22025, a novel human cyclic nucleotide phosphodiesterase

DATE-ISSUED: November 14, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Robision; Keith E.	Wilmington	MA		
Kapeller-Libermann; Rosana	Chestnut Hill	MA		
White; David	Holbrook	MA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Millennium Pharmaceuticals, Inc.	Cambridge	MA			02

APPL-NO: 09/ 330970 [PALM]
DATE FILED: June 11, 1999

PARENT-CASE:
CROSS-REFERENCES TO RELATED APPLICATIONS This application is a continuation-in-part of copending U.S. patent application Ser. No. 09/277,423, filed on Mar. 26, 1999, entitled "Novel Nucleic Acid and Protein Homologs", which is hereby incorporated herein in its entirety by reference.

INT-CL: [07] C12 N 1/20, C12 N 15/00, C07 H 21/04

US-CL-ISSUED: 435/243; 435/252.3, 435/320.1, 536/23.2, 536/23.5, 536/24.31
US-CL-CURRENT: 435/243; 435/252.3, 435/320.1, 536/23.2, 536/23.5, 536/24.31

FIELD-OF-SEARCH: 536/23.2, 536/23.5, 536/24.31, 435/183, 435/243, 435/252.3, 435/320.1

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected Search ALL

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	5527896	June 1996	Wigler et al.	536/23.5
☐	5702936	December 1997	Beavo et al.	
☐	5798246	August 1998	Au-Young et al.	
☐	5851784	December 1998	Owens et al.	

OTHER PUBLICATIONS

Michaeli, Tamar, et al., "Isolation and Characterization of a Previously Undetected Human cAMP Phosphodiesterase by Complementation of cAMP Phosphodiesterase-deficient Saccharomyces cervisiae," The Journal Of Biological Chemistry, vol. 268, No. 17, pp. 12, Jun. 1993.
Bloom, T., et al., "Identification and tissue-specific expression of PDE7 phosphodiesterase splice variants," Proceedings of the National Academy of Sciences, USA, vol. 93, pp. 14188-14192, Nov. 1996.
ID CN7A.sub.-- HUMAN, Jun. 1993.
ID CN7A.sub.-- MOUSE, Nov. 1996.
Houslay et al. (1997), "Tailoring cAMP-Signalling Responses Through Isoform Multiplicity", TiBS 22:217:224.
Bloom et al. (1996), "Identification and Tissue-Specific Expression of PDE7 Phosphodiesterase Splice Variants", Proc. Natl. Acad. Sci. USA 93:14188-14192.
Han et al. (1997), "Alternative Splicing of the High Affinity cAMP-Specific Phosphodiesterase (PDE7A) mRNA in Human Skeletal Muscle and Heart", The Journal of Biological Chemistry 272 (26):16152-16157.
Beavo (1995), "Cyclic Nucleotide Phosphodiesterases: Functional Implications of Multiple Isoforms", Physiological Reviews 75(4):725-748.
DNA Blast Analysis Against NUC, PrevPatent Databases.
Protein Blast Analysis Against PNU, Patent Databases.

ART-UNIT: 165

PRIMARY-EXAMINER: Sisson; Bradley L.

ABSTRACT:

The present invention relates to a newly identified human cyclic nucleotide phosphodiesterase belonging to the superfamily of mammalian phosphodiesterases. The invention also relates to polynucleotides encoding the phosphodiesterase. The invention further relates to methods using the phosphodiesterase polypeptides and polynucleotides as a target for diagnosis and treatment in phosphodiesterase-mediated or -related disorders. The invention further relates to drug-screening methods using the phosphodiesterase polypeptides and polynucleotides to identify agonists and antagonists for diagnosis and treatment. The invention further encompasses agonists and antagonists based on the phosphodiesterase polypeptides and polynucleotides. The invention further relates to procedures for producing the phosphodiesterase polypeptides and polynucleotides.

8 Claims, 9 Drawing figures

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L1: Entry 1 of 1 File: USPT Nov 14, 2000

US-PAT-NO: 6146876
DOCUMENT-IDENTIFIER: US 6146876 A

TITLE: 22025, a novel human cyclic nucleotide phosphodiesterase

DATE-ISSUED: November 14, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Robision; Keith E.	Wilmington	MA		
Kapeller-Libermann; Rosana	Chestnut Hill	MA		
White; David	Holbrook	MA		

US-CL-CURRENT: 435/243; 435/252.3, 435/320.1, 536/23.2, 536/23.5, 536/24.31

CLAIMS:

That which is claimed:

1. An isolated nucleic acid molecule having a nucleotide sequence selected from the group consisting of:

(a) the nucleotide sequence shown in SEQ IN NO:2 or SEQ ID NO:4 and degenerate variants thereof wherein said nucleotide sequence encodes a cyclic nucleotide phosphodiesterase;

(b) the nucleotide sequence in the cDNA contained in ATCC Deposit No. PTA-1644; and

(c) a nucleotide sequence complementary to and hybridizing to a unique sequence for any of the nucleotide sequences in (a) or (b) under highly stringent conditions.

2. An isolated nucleic acid molecule having a nucleotide sequence selected from the group consisting of:

(a) a nucleotide sequence that hybridizes to the entire nucleotide sequence shown in SEQ ID NO:2 or SEQ ID NO:4 under stringent conditions;

(b) a nucleotide sequence that hybridizes to the cDNA contained in ATCC Deposit PTA-1644 under stringent conditions; and

(c) a nucleotide sequence complementary to and hybridizing to a unique sequence for ally of the nucleotide sequences in (a) or (b) under highly stringent conditions.

3. An isolated nucleic acid molecule a polynucleotide having a nucleotide sequence selected from the group consisting of:

(a) a nucleotide sequence encoding a fragment of the amino acid sequence shown

in SEQ ID NO:1 or SEQ ID NO:3, wherein the fragment comprises at least 50 contiguous amino acids and retains cyclic nucleotide phosphodiesterase activity;

(b) a nucleotide sequence encoding a fragment of the amino acid sequence encoded by the cDNA contained in ATCC Deposit No. PTA-1644, wherein the fragment comprises at least 50 contiguous amino acids and retains cyclic phosphodiesterase activity; and

(c) a nucleotide sequence complementary to and hybridizing to a unique sequence for any of the nucleotide sequences in (a) or (b) under highly stringent conditions.

4. A nucleic acid vector comprising the nucleic acid sequences in any of claims 1-3.

5. A host cell containing the vector of claim 4.

6. An isolated nucleic acid molecule having a nucleotide sequence having at least 70% sequence identity to the nucleotide sequence shown in SEQ ID NO:2 or SEQ ID NO:4 and retains cyclic nucleotide phosphodiesterase activity.

7. An isolated nucleic acid molecule having a nucleotide sequence having at least 80% sequence identity to the nucleotide sequence shown in SEQ TD NO:2 or SEQ ID NO:4 and retains cyclic nucleotide phosphodiesterase activity.

8. An isolated nucleic acid molecule having a nucleotide sequence having at least 90% sequence identity to the nucleotide sequence shown in SEQ ID NO:2 or SEQ ID NO:4 and retains cyclic nucleotide phosphodiesterase activity.

Claims only 22 — 5

Please provide a copy each of the following art : (09/471459)

(1) : TI Isolation and differential tissue distribution of two human cDNAs encoding PDE1 splice variants.
AU **Fidock Mark**; Miller Michele; Lanfear Jerry
CELLULAR SIGNALLING, (2002 Jan) 14 (1) 53-60.

(2) TITLE: Cloning and characterization of two splice variants of human phosphodiesterase 11A
AUTHOR(S): Hetman, Joanna M.; Robas, Nicola; Baxendale, Rhona; **Fidock, Mark**; Phillips, Stephen C.; Soderling, Scott H.; Beavo, Joseph A.
SO : Proceedings of the National Academy of Sciences of the United States of America (2000), 97(23), 12891-12895

(3) Beavo (1995), "Cyclic Nucleotide Phosphodiesterases: Functional Implications of Multiple Isoforms", Physiological Reviews 75(4):725-748

Thank you !

Jekchand Saidha
Art Unit 1652, CM1, Room No. 10D05
Mail Box 10C01
(703) 455- 7243

20004

Q11. N26

Please provide a copy each of the following art : (09/471459)

(1) : TI Isolation and differential tissue distribution of two human cDNAs encoding PDE1 splice variants.
AU **Fidock Mark**; Miller Michele; Lanfear Jerry
CELLULAR SIGNALLING, (2002 Jan) 14 (1) 53-60.

(2) TITLE: Cloning and characterization of two splice variants of human phosphodiesterase 11A
AUTHOR(S): Hetman, Joanna M.; Robas, Nicola; Baxendale, Rhona; **Fidock, Mark**; Phillips, Stephen C.; Soderling, Scott H.; Beavo, Joseph A.
SO : Proceedings of the National Academy of Sciences of the United States of America (2000), 97(23), 12891-12895

(3) Beavo (1995), "Cyclic Nucleotide Phosphodiesterases: Functional Implications of Multiple Isoforms", Physiological Reviews 75(4):725-748

Thank you !

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